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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801.551	03/17/2004	Yoshihiro Yanagi	2004_0411A	3491
513 7590 08/22/2006 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			EXAMINER GHYKA, ALEXANDER G	
			ART UNIT 2812	PAPER NUMBER

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/801,551

Applicant(s)

YANAGI ET AL.

Examiner

Alexander G. Ghyska

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 7-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

ALEXANDER GHYKA
PRIMARY EXAMINER

AV2812
Alex Ghyska

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Applicants' response of 6/15/2006 has been considered and entered in the record. Claims 1-6 have been cancelled. New claims 7-14 are added. The rejections under 35 USC 102 have been withdrawn in view of Applicants' amendments. With respect to the rejection under 35 USC 103, Applicants' arguments have been considered, but they are not persuasive for the reasons as discussed below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al (US 6,703,317) or Pan et al (US 2003/0235994), in view of Misumi et al (US 5,492,862).

The present claims generally call for a method of forming under a reduced pressure, a thin film circuit by applying a high frequency power to an electrode for supporting a substrate to be subjected to plasma processing, said method comprising, before performing said plasma processing on the substrate, simultaneously subjecting a top surface and a bottom surface of the substrate to a charge-neutralization plasma in gas mainly composed of an inert gas while the substrate is separated from the electrode, so that electric charges on the substrate are neutralized.

Cheng discloses charge neutralizing a wafer using nitrogen gas plasma, and a subsequent plasma enhanced chemical vapor deposition process. See Figures 1-4, column 3, lines 1-20; column 4, lines 45-65 and column 6, lines 30-40

Pan et al disclose charge neutralizing a wafer using a hydrogen gas plasma and a subsequent reactive ion etch (RIE). See Figure 3 and page 4, Claims 1-4. RIE is a plasma process. See page 1, paragraph 4.

Cheng et al or Pan et al disclose the presently claimed limitations with the exception of the limitation that the top and bottom surfaces of the wafer are simultaneously subjected to the plasma in the inert gas.

Misumi et al disclose a vacuum charge neutralization method which comprises a rotatable treatment so that the entire surface of the wafer is scanned and uniformly treated with ion beams. See column 1, lines 20-30; column 2, lines 35-50; column 3, lines 10-25 and Figures 1 and 3. Misumi et al also disclose the charge neutralization by treatment with the plasma of an inert gas. See column 5, lines 1-10. Misumi discloses the wafer 4, is supported by pins 19, and therefore both sides of the wafer would be exposed to the plasma simultaneously. See Figure 3 of Misumi et al.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the plasma process of Cheng et al or Pan et al in the apparatus as disclosed by Misumi et al for its known benefit of charge neutralization of a semiconductor wafer. The use of a known apparatus, charge neutralization apparatus as disclosed by Misumi, for its known benefit, charge neutralization in the processes as disclosed by the Cheung et al or Pan et al references, would have been within the level of skill of one of ordinary skill in the art. The use of the apparatus of Misumi in the process of Cheung et al or Pan et al would result in the top and bottom surfaces of the wafer being simultaneously subjected to the plasma of the inert gas. Therefore, a *prima facie* case of obviousness is established.

With respect to Claim 8, all of the references disclose inert gases as required by the present Claim.

With respect to Claims 9-10, Misumi disclose the use of pins to separate the wafer surfaces. See column 3, lines 10-20.

With respect to Claims 11-13, the power level is simply a matter of optimization, which would be within the level of skill of one of ordinary skill in the art.

With respect to Claim 14, Misumi discloses one process chamber 3. See Figure 2.

Response to Applicants' Arguments

With respect to Applicants' arguments pertaining to the Pan and Cheng references, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Moreover, with respect to Applicants' arguments that Misumi does not disclose or even suggest that both a top surface and a bottom surface of a substrate are simultaneously subjected to a charge neutralization plasma while the substrate is separated from the electrode, the Examiner maintains that Figure 3 of Misumi discloses a wafer which is separated from an electrode and supported by pins 19, so that both of its sides are simultaneously subjected to the charge neutralization plasma. In view of the foregoing, the present Claims do not patentably distinguish over the cited references.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander G. Ghyka whose telephone number is (571) 272-1669. The examiner can normally be reached on Monday through Friday during general business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

AGG

August 18, 2006

ALEXANDER GHYKA
PRIMARY EXAMINER

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